

FIELD MEASUREMENTS OF IMPACT SOUND INSULATION OF FLOORS

Date of Test :	Tuesday, 22 September 2020
Project No. :	4225
Testing Company :	Koikas Acoustics
Checked by :	Nick Koikas
Place of Test:	Residential building in Macquarie Park
Client	Paxwood Pty Ltd (Clever Choice Design Floors)
Client Address	-

	Name	Thickness (mm)	Density (Sf)
Description of Floor System	Engineered Timber 20mm	20	--
	Clever Rubber 5mm underlay	5	--
	Concrete	200	--

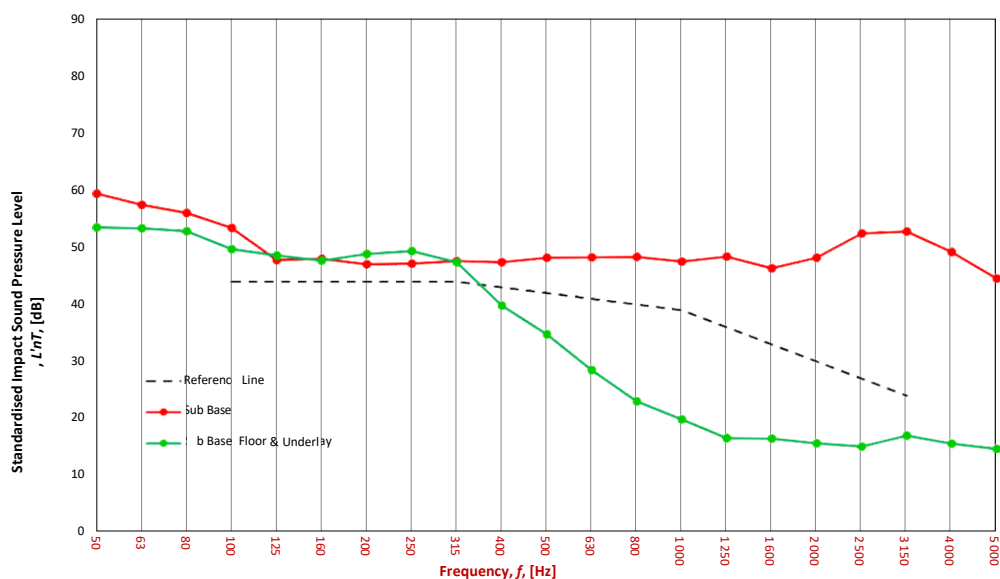
Room	Width :	3.6	m
Floor	Length :	3.6	m
Dimensions	Area :	13	m ²

Sample Dimensions	Width :	1	m
	Length :	1	m
	Area :	1	m ²

	Location	Width	Length	Area	Height	Volume
Receiver Rm	Unit directly below - livingarea	3.6	3.6	13	2.7	35

Room Surfaces		
Walls	Floor	Ceiling
Plasterboard	Carpet	Plasterboard

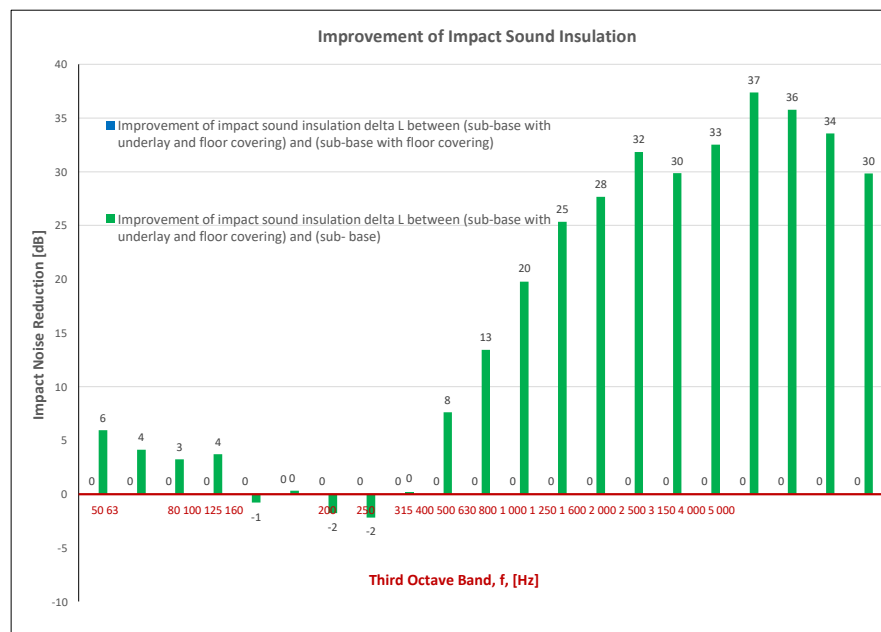
Frequency f Hz	L'nT (one-third octave) dB		
	Sub Base	Sub Base Floor	Sub Base Floor Underlay
50	59.4	N/A	53.5
63	57.5	N/A	53.3
80	56.0	N/A	52.8
100	53.4	N/A	49.7
125	47.8	N/A	48.6
160	48.0	N/A	47.7
200	47.0	N/A	48.8
250	47.1	N/A	49.3
315	47.6	N/A	47.4
400	47.4	N/A	39.8
500	48.2	N/A	34.8
630	48.3	N/A	28.5
800	48.3	N/A	23.0
1 000	47.5	N/A	19.9
1 250	48.4	N/A	16.5
1 600	46.3	N/A	16.5
2 000	48.2	N/A	15.7
2 500	52.5	N/A	15.1
3 150	52.8	N/A	17.0
4 000	49.2	N/A	15.6
5 000	44.5	N/A	14.7



Sub Base		
L'nT,w	56	AS ISO 717.2 - 2004
Ci	-10	AS ISO 717.2 - 2004
Ci(50-2500)	-6	AS ISO 717.2 - 2004
Ci(63-2000)	-8	AS ISO 717.2 - 2004
AAAC	2 Star	AAAC Guideline
FIIC	46	ASTM E1007-14

Sub Base & Floor		
L'nT,w	N/A	AS ISO 717.2 - 2004
Ci	N/A	AS ISO 717.2 - 2004
Ci(50-2500)	N/A	AS ISO 717.2 - 2004
Ci(63-2000)	N/A	AS ISO 717.2 - 2004
AAAC	N/A	AAAC Guideline
FIC	N/A	ASTM E1007-14

Sub Base, Floor & Underlay		
L'nT,w	42	AS ISO 717.2 - 2004
Ci	0	AS ISO 717.2 - 2004
Ci(50-2500)	3	AS ISO 717.2 - 2004
Ci(63-2000)	2	AS ISO 717.2 - 2004
AAAC	5 Star	AAAC Guideline
FIIC	68	ASTM E1007-14



Definitions of Noise Metrics

FIIC:

Field Impact Insulation Class is a single-number rating of how well a floor system attenuates impact type sounds, such as footsteps. Calculated from third-octave band normalised impact sound pressure level data and referenced to 10 m: as described in ASTM E989. The higher the single-number rating, the better its impact insulation performance.

$L'nT,w:$

The Weighted Standardised Impact Sound Pressure Level when measured in situ referenced to a reverberation time (RT60) of 0.5 seconds. Used by the AAC to determine their respective Star Rating.

Cj:

Spectrum adaption term is a low frequency correction factor. Typically for massive floors such as concrete, the values are about zero while for timber joist floors C_i is positive because of the low resonant frequencies. Considers frequency range between 100 -and 2500 Hz.

Cj(50-2500):

Same as above, but for the frequency range 50 -2500 Hz.

Ci(125-2000):

Same as above, but for the frequency range 125 -2000 Hz.

AAAC Star R.	2	3	4	5	6
L'nT,w	65	55	50	45	40
FiIC	45	55	60	65	70
Comments	Below BCA 62	Clearly Audible	Audible	Barely Inaudible	Normally Inaudible